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08/824,633	03/27/1997	CHARLES FRANKLIN DRILL		8856

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EXAMINER

RACHUBA, MAURINA T

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3723

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 42

Application Number: 08/824,633  
Filing Date: March 27, 1997  
Appellant(s): DRILL ET AL.

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Mr. Peter Zawilski  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed October 20, 2003.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect.

No amendment after final has been filed. Appellant filed a request for reconsideration, paper no.32, filed March 4, 2003, which was not convincing.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct. On further review of appellant's arguments regarding the rejection under 35 USC 103 over Glover in view of Cote et al, the examiner agrees that Cote et al does not disclose or fairly teach the use of at least two concentric or linear base regions of differing hardness or thickness, and these claims would be allowed if written in independent form.

**(7) Grouping of Claims**

Appellant's brief includes a statement that claims 22-28 and 29-35 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22, and 26-28 are finally rejected under 35 U.S.C. 102(b) as being clearly anticipated by Glover, 959,054. Glover discloses a polishing pad comprising a circular base layer 1, and an overlying circular top layer 2,3, the overlying top layer forming the polishing surface of the pad; wherein the polishing surface of the polishing pad has at least two polishing regions thereon, the at least two polishing regions having distinct polishing characteristics (see lines 30-32), and wherein the at least two polishing regions are disposed on the pad as concentric annular regions (please see figure 1). Each of the at least two top layer concentric annular regions are disposed so as to correspond with a single one of the at least two polishing regions, and each of the at least two top layer concentric annular regions has a different polishing characteristic, or

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a different surface texture (here, the inner concentric annular region is of a coarse abrasive, the outer concentric annular region is of a fine abrasive). Each region is of a size so that the article being ground can be frictionally engaged with one of the concentric annular polishing regions without simultaneously being engaged with others of the at least two concentric annular polishing regions (please see lines 40-51)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 29, 30, 34 and 35 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Glover, '054. Glover discloses a polishing pad having at least two polishing regions thereon, the at least two polishing regions having distinct polishing characteristics, the inner region having one polishing characteristic, the outer region

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having another. Glover discloses that the polishing pad is of disk form, and does not disclose that the pad may be of any other form, or that the polishing regions are parallel linear regions. In making this rejection, the examiner took Official notice that polishing pads in linear form are old and well known in the art. Appellant did not contest this rejection based on Official notice, but on the teachings of Glover on the polishing regions with different polishing characteristics. Therefore, applicant has admitted that linear polishing pads are prior art, but has not admitted that providing parallel polishing regions on linear polishing pads is old and well known. Please consider that for polishing of the workpiece to take place, there must be relative movement between the polishing tool and the workpiece. Appellant, in the specification, directs the user of his invention to provide this relative movement by either rotating the disk shaped pad, or entraining the linear pad about two rollers to provide linear motion to the pad. Glover does teach providing polishing regions with distinct polishing characteristics, the regions placed on the disk shaped pad such that the workpiece contacts the regions along a radial position, which allows the workpiece to be thoroughly processed on each region as the pad rotates relative to the workpiece. If the pad is in linear form, prior art as admitted by appellant, it is inherent that the polishing regions follow the shape of the pad, as taught by Glover, in that the polishing regions are parallel linear regions, as the workpiece would need to contact each region along a line parallel to the longitudinal axis of the pad to allow the workpiece to be thoroughly processed on each region as the linear pad moves relative to the workpiece.

**(11) Response to Argument****Issue 1:**

Appellants assert that Glover does not disclose the claimed limitation of each polishing region having **distinct polishing characteristics** [emphasis added].

Appellant further relies on the disclosure of Glover, column 1, lines 13-16, "the object of the invention is to provide a prepared disk in which the abrasive material is applied to one side face and is graded from the center outwardly". The examiner agrees that the abrasive is graded from coarse at the center to fine at the outer periphery. Glover, column 1, lines 17-23, further states "For grinding, the article to be ground is first applied to that part of the disk having the coarser abrasive. The operator may gradually work, without interruption, from this part of the disc to that part of the disk which bears a finer abrasive, thus expediting materially the work to be accomplished." And Glover, column 1 lines 36 through column 2, line 54, further defines how the disk is used, by placing the workpiece on the coarser region, then moving it across the disk to the finer region. It is the examiner's position that the disclosure of Glover clearly anticipated appellants' claimed invention, in that there are at least two polishing regions, one near the center, one near the periphery, each polishing region having distinct polishing characteristics, the region nearest the center being of a different abrasive quality than the region nearest the periphery. Further, it is the examiner's position that even as the abrasive is graded from the center to the edge of the disk, this meets appellant's invention as claimed, as appellant has not claimed (or disclosed) that the regions are distinct, only that the polishing characteristics are distinct. Each area of the surface of

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the disk disclosed by Glover has a distinct polishing characteristic, based on the percentage of coarse particles to fine particles.

Appellants further argue that Glover would not be capable of performing the intended use of applicant's device, as Glover is concerned with polishing the workpiece on a macroscopic level, and not on the microscopic level on the integrated circuits on wafer substrates during chemical-mechanical polishing. The examiner does not agree that the device of Glover is not suitable for appellants stated use.

MPEP 2111.01 states in part:

"[A] claim preamble has the import that the claim as a whole suggests for it." *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). "If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999). See also *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951) (A preamble reciting "An abrasive article" was deemed essential to point out the invention defined by claims to an article comprising abrasive grains and a hardened binder and the process of making it. The court stated "it is only by that phrase that it can be known that the subject matter defined by the claims is comprised as an



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abrasive article. Every union of substances capable inter alia of use as abrasive grains and a binder is not an abrasive article.” Therefore, the preamble served to further define the structure of the article produced.).

Claims 22 and 29 recite as the preamble “A polishing pad suitable for chemical mechanical polishing of wafers”. The bodies of the claims further define the shape and polishing regions of the polishing pads. Does the claim preamble, when read in the context of the entire claim, recite limitations of the claim?. It does not. Is the claim preamble necessary to give life, meaning, and vitality to the claim? Chemical mechanical polishing of wafers, as known in the art, (please refer to appellant's specification, page 3, first full paragraph for a general definition) requires the use of both a chemical agent and an abrasive agent. The polishing pad may have an abrasive surface, (referred to as a fixed-abrasive pad) or may be without an abrasive surface, the abrasive provided in slurry form to the surface of the pad. The chemical component aids in polishing, either through etching the surface to remove material, or by lubricating the wafer to reduce friction. A pad “suitable for chemical mechanical polishing of wafers” would therefor be a pad with or without an abrasive surface for use with a chemical etchant or lubricant. Appellant has not disclosed or claimed whether the pad is a fixed abrasive pad, or if the abrasive is supplied with the chemical as part of a slurry, There are no claimed limitations directed to the composition or material of the pads. It is the examiner's position that the preamble is not necessary to give life, meaning, and vitality to the claim.

MPEP2111.02 further states:

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If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction.

Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999).

And

If a prior art structure is capable of performing the intended use as recited in the preamble, then it meets the claim. See, e.g., In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997)

It is the examiner's position that the device taught by Glover is capable of being used for chemical mechanical polishing of wafers. Appellant has not claimed a specific pad material, a specific polishing medium, a specific abrasive, or the machine which uses the pad, only that the pad have a surface with regions having distinct polishing characteristics. This is anticipated by the disclosure of Glover. Further, Glover leaves it to the user to decide how coarse or fine the abrasive regions are, only requiring that there be regions of coarser and finer particles. That Glover discloses a specific abrasive is moot, applicant has not claimed any specific abrasive, or its form, only that there be distinct polishing characteristics. Appellant also argues the age of the reference. As the rejection of the claims argued is under 35 USC 102, and not 35 USC

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103, the age of the reference is not considered, only whether it anticipates the claimed invention.

***Issue 2***

Appellant does not argue the rejection under 35 USC 103 over Glover, except to refer attention to the arguments of Issue 1.


Regarding the rejections of claims 23-25 and 31-32, the examiner has withdrawn these rejections, and claims 23-25 and 31-32 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The examiner agrees that the teaching of Cote et al, which provides pad configurations designed to continuously expose the workpiece to a different polishing characteristic with each rotation of the pad teaches away from appellants' invention

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

M Rachuba  
Primary Examiner  
Art Unit 3723



mtr

January 6, 2004

Conferees

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